

Performance Measure Summary - Fresno CA

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2017. There is no single performance measure that experts agree "says it all". A few key points should be recognized by users of the Urban Mobility Scorecard data.

Use the trends - The multi-year performance measures are better indicators, in most cases, than any single year. Examining a few measures over many years reduces the chance that data variations or the estimating procedures may have caused a "spike" in any single year. (5 years is 5 times better than 1 year.)

Use several measures - Each performance measure illustrates a different element of congestion. (The view is more interesting from atop several measures.)

Compare to similar regions - Congestion analyses that compare areas with similar characteristics (for example, population, growth rate, road and public transportation system design) are usually more insightful than comparisons of different regions. (Los Angeles is not Peoria.)

Compare ranking changes and performance measure values - In some performance measures, a small change in the value may cause a significant change in rank from one year to the next. This is the case when there are several regions with nearly the same value. (15 hours is only 1 hour more than 14 hours.)

Consider the scope of improvement options - Any improvement project in a corridor within most of the regions will only have a modest effect on the regional congestion level. (To have an effect on areawide congestion, there must be significant change in the system or service.)

Performance Measures and Definition of Terms

Travel Time Index - A measure of congestion that focuses on each trip and each mile of travel. It is calculated as the ratio of travel time in the peak period to travel time in free-flow. A value of 1.30 indicates that a 20-minute free-flow trip takes 26 minutes in the peak.

Planning Time Index - A travel time reliability measure that represents the total travel time that should be planned for a trip. Computed with the 95th percentile travel time it represents the amount of time that should be planned for a commute trip to be late for only 1 day a month. If it is computed with the 80th percentile travel time it represents the amount of time that should be planned for a trip to be late for only 1 day a week. A PTI of 2.00 means that for a 20-minute trip in light traffic, 40 minutes should be planned.

Peak Commuters - Number of travelers who begin a trip during the morning or evening peak travel periods (6 to 10 a.m. and 3 to 7 p.m.). "Commuters" are private vehicle users unless specifically noted.

Annual Delay per Commuter - A yearly sum of all the per-trip delays for those persons who travel in the peak period (6 to 10 a.m. and 3 to 7 p.m.). This measure illustrates the effect of traffic slowdowns as well as the length of each trip.

Total Delay - The overall size of the congestion problem. Measured by the total travel time above that needed to complete a trip at free-flow speeds. The ranking of total delay usually follows the population ranking (larger regions usually have more delay).

Free-Flow Speeds - These values are derived from time periods with lighter traffic volumes in the INRIX speed database. They are used as the national comparison thresholds. Other speed thresholds may be appropriate for urban project evaluations or sub-region studies.

Excess Fuel Consumed - Increased fuel consumption due to travel in congested conditions rather than free-flow conditions.

Congestion Cost - Value of travel delay for 2017 (estimated at \$18.29 per hour of person travel and \$59.94 per hour of truck time) and excess fuel consumption estimated using state average cost per gallon.

Urban Area - The developed area (population density more than 1,000 persons per square mile) within a metropolitan region. The urban area boundaries change frequently (every year for most growing areas), so increases include both new growth and development that was previously in areas designated as rural.

Number of Rush Hours - Time when the road system might have congestion.

Mobility Data for Fresno CA

Inventory Measures	2017	2016	2015	2014	2013	2012
Urban Area Information						
Population (1000s)	700	690	680	675	675	675
Rank	63	63	63	62	62	62
Commuters (1000s)	356	350	344	341	347	347
Daily Vehicle-Miles of Travel (1000s)						
Freeway	4,462	4,462	3,695	3,270	3,129	3,820
Arterial Streets	5,339	5,276	5,097	5,350	6,217	6,110
Cost Components						
Value of Time (\$/hour)	18.12	17.91	17.69	17.67	17.39	17.14
Commercial Cost (\$/hour)	52.14	50.20	46.87	44.82	41.23	39.66
Gasoline (\$/gallon)	2.96	2.78	3.18	3.63	3.89	3.89
Diesel (\$/gallon)	2.95	2.68	2.86	3.85	4.12	4.20
System Performance	2017	2016	2015	2014	2013	2012
Congested Travel (% of peak VMT)	2.8	--	--	--	--	--
Congested System (% of lane-miles)	12.6	--	--	--	--	--
Congested Time (number of "Rush Hours")	2.4	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	7,844	7,706	7,557	7,432	7,263	6,979
Rank	63	63	64	64	65	66
Fuel per Peak Auto Commuter (gallons)	19	18	17	16	16	14
Rank	55	60	65	70	71	82
Annual Delay						
Total Delay (1000s of person-hours)	19,311	18,769	18,092	17,638	16,934	16,127
Rank	62	62	62	62	62	64
Delay per Auto Commuter (pers-hrs)	40	40	39	36	32	29
Rank	75	72	71	78	85	89
Travel Time Index						
Rank	1.16	1.16	1.15	1.15	1.15	1.14
Rank	61	61	69	71	70	79
Commuter Stress Index						
Rank	1.19	--	--	--	--	--
Rank	50	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	1.39	--	--	--	--	--
Rank	55	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	396	378	361	355	336	316
Rank	61	61	61	62	62	63
Cost per Auto Commuter (\$)	779	764	731	709	687	664
Rank	60	60	63	63	66	66
Truck Congestion						
Annual Person-Hours of Delay (000)	811	788	760	741	711	677
Rank	62	62	62	62	62	64
Annual Gallons of Wasted Fuel (000)	1,663	1,634	1,602	1,576	1,540	1,480
Rank	63	63	64	64	65	66
Annual Congestion Cost (\$ million)	42	39	36	35	32	30
Rank	61	61	61	61	62	61

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Fresno CA

Inventory Measures	2011	2010	2009	2008	2007	2006
Urban Area Information						
Population (1000s)	670	670	665	660	640	640
Rank	62	62	61	61	61	61
Commuters (1000s)	344	343	339	335	323	322
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,857	3,835	3,857	3,900	3,740	3,890
Arterial Streets	6,318	6,281	6,527	6,600	6,475	6,435
Cost Components						
Value of Time (\$/hour)	16.79	16.28	16.01	16.07	15.47	15.06
Commercial Cost (\$/hour)	44.62	42.50	41.83	40.77	39.30	37.88
Gasoline (\$/gallon)	3.51	3.05	2.61	3.84	3.24	2.88
Diesel (\$/gallon)	4.02	3.20	2.71	4.39	3.60	3.17
System Performance	2011	2010	2009	2008	2007	2006
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	6,949	6,852	6,730	6,802	7,087	6,868
Rank	65	65	66	66	63	63
Fuel per Peak Auto Commuter (gallons)	12	11	10	10	11	10
Rank	89	95	93	95	94	93
Annual Delay						
Total Delay (1000s of person-hours)	15,768	15,262	14,710	14,160	14,754	14,297
Rank	62	61	62	63	61	63
Delay per Auto Commuter (pers-hrs)	26	25	24	24	23	23
Rank	91	93	91	92	93	93
Travel Time Index						
Rank	1.14	1.13	1.12	1.12	1.11	1.10
Rank	77	83	89	90	95	96
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	305	283	266	266	264	246
Rank	61	61	61	63	61	62
Cost per Auto Commuter (\$)	668	669	656	624	677	674
Rank	65	66	65	69	62	61
Truck Congestion						
Annual Person-Hours of Delay (000)	662	641	618	595	620	600
Rank	62	61	62	63	61	63
Annual Gallons of Wasted Fuel (000)	1,473	1,453	1,427	1,442	1,502	1,456
Rank	65	65	65	66	63	63
Annual Congestion Cost (\$ million)	32	29	27	28	27	25
Rank	61	61	61	61	60	60

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Fresno CA

Inventory Measures	2005	2004	2003	2002	2001	2000
Urban Area Information						
Population (1000s)	615	605	595	585	560	560
Rank	64	64	63	63	63	63
Commuters (1000s)	307	300	294	285	270	266
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,865	3,645	3,280	3,215	2,520	2,550
Arterial Streets	6,470	6,440	6,540	6,510	6,400	6,505
Cost Components						
Value of Time (\$/hour)	14.58	14.10	13.73	13.43	13.22	12.85
Commercial Cost (\$/hour)	36.51	35.19	33.92	32.69	31.51	30.38
Gasoline (\$/gallon)	2.62	2.28	1.78	1.66	1.93	1.72
Diesel (\$/gallon)	2.93	2.27	1.79	1.58	1.78	1.68
System Performance	2005	2004	2003	2002	2001	2000
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	6,617	6,458	6,180	5,988	5,557	5,140
Rank	64	63	64	62	65	67
Fuel per Peak Auto Commuter (gallons)	10	10	9	10	9	8
Rank	93	90	91	87	89	89
Annual Delay						
Total Delay (1000s of person-hours)	13,774	13,444	12,865	12,466	11,567	10,700
Rank	61	61	61	60	63	66
Delay per Auto Commuter (pers-hrs)	23	23	22	22	21	20
Rank	93	92	93	93	92	92
Travel Time Index						
Rank	1.10	1.10	1.10	1.10	1.10	1.09
Rank	96	96	91	91	88	92
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	229	214	196	185	170	152
Rank	61	61	61	60	61	66
Cost per Auto Commuter (\$)	671	678	666	659	619	587
Rank	61	59	62	60	62	64
Truck Congestion						
Annual Person-Hours of Delay (000)	579	565	540	524	486	449
Rank	61	61	61	60	63	66
Annual Gallons of Wasted Fuel (000)	1,403	1,369	1,310	1,270	1,178	1,090
Rank	64	63	64	62	65	67
Annual Congestion Cost (\$ million)	23	21	18	17	16	14
Rank	60	60	61	59	59	63

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Mobility Data for Fresno CA

Inventory Measures	1999	1998	1997	1996	1995	1994
Urban Area Information						
Population (1000s)	550	545	540	530	525	515
Rank	63	63	63	64	64	64
Commuters (1000s)	258	253	247	240	234	227
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,200	2,025	1,915	1,895	1,885	1,740
Arterial Streets	6,250	6,180	5,940	5,700	5,505	5,480
Cost Components						
Value of Time (\$/hour)	12.43	12.17	11.98	11.71	11.37	11.06
Commercial Cost (\$/hour)	29.28	28.89	28.50	28.12	27.75	27.38
Gasoline (\$/gallon)	1.59	1.27	1.40	1.21	1.27	1.16
Diesel (\$/gallon)	1.50	1.39	1.51	1.24	1.31	1.19
System Performance	1999	1998	1997	1996	1995	1994
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	5,004	4,423	4,163	3,930	3,733	3,446
Rank	66	67	67	66	67	68
Fuel per Peak Auto Commuter (gallons)	8	7	6	6	7	5
Rank	88	87	88	85	77	88
Annual Delay						
Total Delay (1000s of person-hours)	10,417	9,207	8,666	8,181	7,771	7,173
Rank	65	68	67	67	65	67
Delay per Auto Commuter (pers-hrs)	20	18	17	17	16	15
Rank	92	92	92	91	91	91
Travel Time Index						
Rank	1.09	1.08	1.08	1.08	1.07	1.07
Rank	87	90	88	87	88	88
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	143	123	114	105	97	87
Rank	63	67	67	67	65	67
Cost per Auto Commuter (\$)	592	537	515	493	488	461
Rank	62	69	68	67	64	62
Truck Congestion						
Annual Person-Hours of Delay (000)	438	387	364	344	326	301
Rank	65	68	67	67	65	67
Annual Gallons of Wasted Fuel (000)	1,061	938	883	833	791	730
Rank	66	67	67	66	67	68
Annual Congestion Cost (\$ million)	13	11	10	10	9	8
Rank	60	66	66	63	64	64

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Mobility Data for Fresno CA

Inventory Measures	1993	1992	1991	1990	1989	1988
Urban Area Information						
Population (1000s)	500	490	475	460	450	430
Rank	64	64	66	66	66	67
Commuters (1000s)	218	211	202	193	187	177
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,710	1,690	1,625	1,580	1,500	1,395
Arterial Streets	5,440	5,350	5,295	5,250	5,220	5,130
Cost Components						
Value of Time (\$/hour)	10.78	10.47	10.17	9.75	9.25	8.83
Commercial Cost (\$/hour)	27.02	26.66	26.30	25.95	25.60	25.26
Gasoline (\$/gallon)	1.23	1.28	1.11	1.14	1.14	1.05
Diesel (\$/gallon)	1.26	1.25	1.25	1.19	1.09	1.01
System Performance	1993	1992	1991	1990	1989	1988
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	3,419	3,286	2,966	2,806	2,595	2,540
Rank	63	62	62	62	62	59
Fuel per Peak Auto Commuter (gallons)	5	6	4	4	4	4
Rank	82	69	85	81	76	71
Annual Delay						
Total Delay (1000s of person-hours)	7,117	6,840	6,175	5,842	5,403	5,287
Rank	63	62	61	59	58	58
Delay per Auto Commuter (pers-hrs)	16	15	15	14	14	14
Rank	89	88	86	86	80	75
Travel Time Index						
Rank	1.07	1.07	1.07	1.07	1.06	1.06
Rank	83	82	81	76	80	74
Commuter Stress Index						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	85	80	70	63	56	52
Rank	63	60	61	59	58	58
Cost per Auto Commuter (\$)	468	464	430	426	418	434
Rank	57	52	55	51	51	41
Truck Congestion						
Annual Person-Hours of Delay (000)	299	287	259	245	227	222
Rank	63	62	61	59	58	58
Annual Gallons of Wasted Fuel (000)	725	697	629	595	550	538
Rank	63	62	62	62	62	59
Annual Congestion Cost (\$ million)	8	8	7	6	6	5
Rank	61	58	58	59	57	58

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Mobility Data for Fresno CA

Inventory Measures	1987	1986	1985	1984	1983	1982
Urban Area Information						
Population (1000s)	410	400	385	370	360	345
Rank	68	68	68	68	68	69
Commuters (1000s)	168	162	155	148	143	135
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,370	1,385	1,335	1,270	1,150	1,100
Arterial Streets	1,980	4,800	4,715	4,550	4,410	4,245
Cost Components						
Value of Time (\$/hour)	8.48	8.18	8.03	7.75	7.43	7.20
Commercial Cost (\$/hour)	24.93	24.60	24.27	23.94	23.63	23.31
Gasoline (\$/gallon)	1.05	1.03	1.35	1.36	1.39	1.46
Diesel (\$/gallon)	1.01	0.99	1.29	1.31	1.34	1.40
System Performance	1987	1986	1985	1984	1983	1982
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,383	2,215	1,831	1,597	1,477	1,373
Rank	59	58	62	62	62	62
Fuel per Peak Auto Commuter (gallons)	4	4	3	2	2	3
Rank	61	54	66	79	69	34
Annual Delay						
Total Delay (1000s of person-hours)	4,961	4,611	3,812	3,324	3,074	2,858
Rank	57	56	61	62	61	61
Delay per Auto Commuter (pers-hrs)	14	13	11	10	10	10
Rank	64	64	72	70	64	58
Travel Time Index						
Rank	66	57	64	57	55	61
Commuter Stress Index						
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)						
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost (\$ millions)	47	43	35	30	27	24
Rank	57	56	61	62	61	61
Cost per Auto Commuter (\$)	421	412	341	308	299	283
Rank	38	36	50	51	50	48
Truck Congestion						
Annual Person-Hours of Delay (000)	208	194	160	140	129	120
Rank	57	56	61	62	61	61
Annual Gallons of Wasted Fuel (000)	505	470	388	338	313	291
Rank	59	58	62	62	62	62
Annual Congestion Cost (\$ million)	5	5	4	3	3	3
Rank	56	50	55	61	55	52

* Note: Zeroes in the table reflect values less than 0.5.